

Serial No. 09/707,815
Docket No. NEC DP-689
Amendment B

AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 2, 5, 10 and 14, as shown below.

This listing of claims will replace all prior versions and listings of claims in the Application:

Claim 1 (currently amended): An image taking apparatus, comprising:

a solid state image taking device which converts an optical image of a subject to be taken to analog video signals and outputs said analog video signals;

a system controller that generates a bit number converting signal;

an analog to digital (A/D) converter which ~~converts at receives said bit number~~
~~converting signal and generates~~ a designated quantization bit number, ~~said designated~~
~~quantization bit number converts~~ said analog video signals outputted from said solid state image taking device to digital video signals having said designated quantization bit number;

a digital signal processor (DSP) which receives said bit number converting signal and generates a designated signal processing bit number that is used in an image process applied to said digital video signals outputted from said A/D converter;

a displaying apparatus which displays said digital video signals outputted from said DSP; and

a recording medium which stores said digital video signals outputted from said DSP;

wherein said designated quantization bit number and said designated signal processing bit number at said A/D converter are variable.

Claim 2 (currently amended): [[2.]] An image taking apparatus in accordance with claim 1, wherein said A/D converter makes said quantization bit number when said digital

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL 520.882.7623
FAX 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL 603.668.1400
FAX. 603.668.8567

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video signals are displayed on said displaying apparatus smaller than the quantization bit number when said digital video signals are stored in said recording medium.

Claim 3 (previously presented): An image taking apparatus in accordance with claim 1, further comprising:

an interface (I/F) circuit which transfers said digital video signals outputted from said DSP to said recording medium in which said digital video signals are recorded, or transfers said digital video signals outputted from said DSP to an external apparatus,

wherein said A/D converter makes said quantization bit number wherein said digital video signals are displayed on said displaying apparatus smaller than the quantization bit number when said digital video signals are transferred to said external apparatus through said I/F circuit.

Claim 4 (previously presented): An image taking apparatus in accordance with claim 1, wherein said signal processing bit number at said DSP is variable, and said signal processing bit number is made to be the same bit number of said quantization bit number at said A/D converter, when said digital video signals are displayed on said displaying apparatus.

Claim 5 (currently amended): An image taking apparatus in accordance with claim 1, further comprising:

a mode setting switch for setting an operation mode at said image taking apparatus, wherein said system controller generates said bit number converting signal for setting said quantization bit number at said A/D converter and said signal processing bit number at said DSP based on said operation mode set at said mode setting switch, and outputs said bit number converting signal to said A/D converter and said DSP, and

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

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wherein[[:] said A/D converter sets said quantization bit number based on said bit number converting signal outputted from said system controller.

Claim 6 (previously presented): An image taking apparatus in accordance with claim 5, wherein said system controller, in case that said digital video signals stored in said recording medium are displayed on said displaying apparatus, stops operation of said solid state image taking device, said A/D converter, and said DSP.

Claim 7 (previously presented): An image taking apparatus in accordance with claim 5, wherein said mode setting switch, in case that said digital video signals have been stored in said recording medium, selects whether said digital video signals stored in said recording medium are made to display on said displaying apparatus or not.

Claim 8 (previously presented): An image taking apparatus in accordance with claim 1, further comprising a displaying apparatus driver for making said digital video signals display on said displaying apparatus by thinning out a part of said digital video signals outputted from said DSP.

Claim 9 (previously presented): An image taking apparatus in accordance with claim 1, wherein said image taking apparatus is an electronic still camera.

Claim 10 (currently amended): An image taking apparatus, comprising:
a solid state image taking device which converts an optical image of a subject to be taken to analog video signals and outputs said analog video signals;
a system controller that generates a bit number converting signal;
an analog to digital (A/D) converter which converts at receives said bit number
converting signal and generates a designated quantization bit number, ssid designated

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
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FAX. 603.668.8567

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quantization bit number converts said analog video signals outputted from said solid state image taking device to digital video signals having said designated quantization bit number;

a digital signal processor (DSP) which receives said bit number converting signal and generates a designated signal processing bit number that is used in an image process applied to said digital video signals outputted from said A/D converter;

a displaying apparatus which displays said digital video signals outputted from said DSP; and

a recording medium which stores said digital video signals outputted from said DSP, wherein said A/D converter provides plural A/D converting sections in which the quantization bit number of each of said plural A/D converting sections is different between them and is fixed, and either one of said plural A/D converting sections converts said analog video signals outputted from said solid state image taking device to digital video signals, and outputs said digital video signals to said DSP, and

wherein said signal processing bit number is variable.

Claim 11 (previously presented): An image taking apparatus in accordance with claim 10, further comprising:

a switching circuit which selects one of said plural A/D converting sections that has smaller quantization bit number than the other of said plural A/D converting sections which is selected at the time when said digital video signals are stored in said recording medium, in case that said digital video signals are displayed on said displaying apparatus,

wherein said digital video signals outputted from said A/D converting section selected by said switching circuit are inputted to said DSP.

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
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Claim 12 (previously presented): An image taking apparatus in accordance with claim 10, further comprising:

an interface (I/F) circuit which transfers said digital video signals outputted from said DSP to said recording medium in which said digital video signals are recorded, or transfers said digital video signals outputted from said DSP to an external apparatus,

wherein said switching circuit, in case that said digital video signals are displayed on said displaying apparatus, selects one of said plural A/D converting sections whose quantization bit number is smaller than the other A/D converting section that is selected at the time when said digital video signals are transferred to an external apparatus through said I/F circuit.

Claim 13 (previously presented): An image taking apparatus in accordance with claim 10, wherein:

said signal processing bit number when said digital video signals are displayed on said displaying apparatus is made to be the same bit number of said quantization bit number at said A/D converting section selected by said switching circuit.

Claim 14 (currently amended): An image taking apparatus in accordance with claim 10, further comprising:

a mode setting switch for setting an operation mode at said image taking apparatus,

wherein said system controller which generates an A/D converting section changing signal for switching said switching circuit based on said operation mode set by said mode setting switch and outputs said generated A/D converting section changing signal to said

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

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switching circuit, and also generates said bit number converting signal for setting said signal processing bit number at said DSP based on said operation mode set at said mode setting switch, and outputs said bit number converting signal to said DSP, and

wherein said switching circuit selects either one of said plural A/D converting sections based on said AD converting section changing signal outputted from said system controller.

Claim 15 (previously presented): An image taking apparatus in accordance with claim 14, wherein said system controller, when said digital video signals stored in said recording medium are displayed on said displaying apparatus, stops operation of said solid state image taking device, said A/D converter, and said DSP.

Claim 16 (previously presented): An image taking apparatus in accordance with claim 14, wherein said mode setting switch, when said digital video signals have been stored in said recording medium, selects whether said digital video signals stored in said recording medium are made to display on said displaying apparatus or not.

Claim 17 (previously presented): An image taking apparatus in accordance with claim 10, further comprising a displaying apparatus driver for making said digital video signals display on said displaying apparatus by thinning out a part of said digital video signals outputted from said DSP.

Claim 18 (previously presented): An image taking apparatus in accordance with claim 10, wherein said image taking apparatus is an electronic still camera.

Claim 19 (previously presented): An image taking apparatus, comprising:

a solid state image taking device which converts an optical image of a subject to be taken to analog video signals and outputs said analog video signals;

HAYES SOLOWAY P.C.
130 W. CLUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
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FAX. 603.668.8567

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an analog to digital (A/D) converter which converts at the designated quantization bit number said analog video signals outputted from said solid state image taking device to digital video signals having said designated quantization bit number;

a digital signal processor (DSP) which applies an image process to said digital video signals outputted from said A/D converter at a designated signal processing bit number;

a displaying apparatus which displays said digital video signals outputted from said DSP; and

a recording medium which stores said digital video signals outputted from said DSP, wherein said designated quantization bit number at said A/D converter is variable, and wherein said A/D converter makes said quantization bit number ~~in case that~~ when said digital video signals are displayed on said displaying apparatus smaller than the quantization bit number when said digital video signals are stored in said recording medium.

Claim 20 (previously presented): An image taking apparatus, comprising:

a solid state image taking device which converts an optical image of a subject to be taken to analog video signals and outputs said analog video signals;

an analog to digital (A/D) converter which converts at the designated quantization bit number said analog video signals outputted from said solid state image taking device to digital video signals having said designated quantization bit number;

a digital signal processor (DSP) which applies an image process to said digital video signals outputted from said A/D converter at a designated signal processing bit number;

a displaying apparatus which displays said digital video signals outputted from said

DSP;

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL 520.882.7623
FAX 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
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FAX 603.668.8567

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a recording medium which stores said digital video signals outputted from said DSP;
and

an interface (I/F) circuit which transfers said digital video signals outputted from said DSP to said recording medium in which said digital video signals are recorded, or transfers said digital video signals outputted from said DSP to an external apparatus,

wherein said A/D converter makes said quantization bit number when said digital video signals are displayed on said displaying apparatus smaller than the quantization bit number when said digital video signals are transferred to said external apparatus through said I/F circuit, and

wherein said designated quantization bit number at said A/D converter is variable.

Claim 21 (previously presented): An image taking apparatus, comprising:

a solid state image taking device which converts an optical image of a subject to be taken to analog video signals and outputs said analog video signals;

an analog to digital (A/D) converter which converts at a designated quantization bit number said analog video signals outputted from said solid state image taking device to digital video signals having said designated quantization bit number;

a digital signal processor (DSP) which applies an image process to said digital video signals outputted from said A/D converter at a designated signal processing bit number;

a displaying apparatus which displays said digital video signals outputted from said DSP;

a recording medium which stores said digital video signals outputted from said DSP;

and

HAYES SOLOWAY P.C.
130 W. CLUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

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a switching circuit which selects one of said plural A/D converting sections that has smaller quantization bit number than the other of said plural A/D converting sections which is selected at the time when said digital video signals are stored in said recording medium, in case that said digital video signals are displayed on said displaying apparatus,

wherein said A/D converter provides plural A/D converting sections in which the quantization bit number of each of said plural A/D converting sections is different between them and is fixed, and either one of said plural A/D converting sections converts said analog video signals outputted from said solid state image taking device to digital video signals, and outputs said digital video signals to said DSP, and

wherein said digital video signals outputted from said A/D converting section selected by said switching circuit are inputted to said DSP.

Claim 22 (previously presented): An image taking apparatus, comprising:

a solid state image taking device which converts an optical image of a subject to be taken to analog video signals and outputs said analog video signals;

an analog to digital (A/D) converter which converts at a designated quantization bit number said analog video signals outputted from said solid state image taking device to digital video signals having said designated quantization bit number;

a digital signal processor (DSP) which applies an image process to said digital video signals outputted from said A/D converter at a designated signal processing bit number;

a displaying apparatus which displays said digital video signals outputted from said DSP;

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

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a recording medium which stores said digital video signals outputted from said DSP;
and
an interface (I/F) circuit which transfers said digital video signals outputted from said DSP to said recording medium in which said digital video signals are recorded, or transfers said digital video signals outputted from said DSP to an external apparatus,
wherein said A/D converter provides plural A/D converting sections in which the quantization bit number of each of said plural A/D converting sections is different between them and is fixed, and either one of said plural A/D converting sections converts said analog video signals outputted from said solid state image taking device to digital video signals, and outputs said digital video signals to said DSP, and
wherein said switching circuit, in case that said digital video signals are displayed on said displaying apparatus, selects one of said plural A/D converting sections whose quantization bit number is smaller than the other A/D converting section that is selected at the time when said digital video signals are transferred to an external apparatus through said I/F circuit.

HAYES SOLOWAY P.C.
130 W. CLIPPING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567